a second detector positioned a distance along an optical axis from the second imaging sub-system to receive light from the second imaging sub-system; and

a processor communicatively linked to the first detector, the processor configured to determine a distance between the first location on the first detector and the second location on the first detector, the processor communicatively linked to the second imaging sub-system, the processor configured to transmit instructions to the second imaging sub-system based upon the determined distance between the first location on the first detector and the second location on the first detector, the second imaging sub-system configured to change the distance that the second detector is positioned along the optical axis from the second imaging sub-system based upon the instructions received from the processor.

19. The system of claim 18 wherein the first imaging sub-system has a magnification and the instructions are based on the determined distance multiplied by the square of the magnification of the second imaging sub-system.

20. A method for maintaining focus in an imaging system comprising:

segmenting objects of interest;

analyzing frequency content of one or more imaged objects in two focus areas associated with received unaltered and defocused light;

if frequency content is not balanced, calculating a focal error signal;

if frequency content is not balanced, determining focal shift; and

adjusting refocusing optics based upon the determined focal shift and the focal error signal.

21 The method of claim 20 wherein the frequency content of the one or more imaged objects in the two focus areas is balanced if the frequency content in the two focus areas is equal.

22. The method of claim 20 wherein the unaltered and defocused light is received on one detector.